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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/594,044	09/25/2006	Tomonori Nakamura	1217-062553	8970
28289 7590 06/23/2008 THE WEBB LAW FIRM, P.C. 700 KOPPERS BUILDING 436 SEVENTH AVENUE PITTSBURGH, PA 15219				
EXAMINER SWANSON, WALTER H				
ART UNIT		PAPER NUMBER		
2823				
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06/23/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/594,044

**Applicant(s)**

NAKAMURA ET AL.

**Examiner**

WALTER H. SWANSON

**Art Unit**

2823

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 September 2006.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-3 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 25 September 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-8508)  
Paper No(s)/Mail Date 22 June 2007  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

#### ***Priority***

Acknowledgment is made of applicants' claim for foreign priority based on an application filed in Japan on 26 March 2004. It is noted that applicants have filed a certified copy of said application as required by 35 U.S.C. 119(b), which papers have been placed of record in the file.

#### ***Oath/Declaration***

Acknowledgment is made of applicants' declaration filed on 25 September 2006.

#### ***Information Disclosure Statement***

The information disclosure statement filed on 22 June 2007 complies with 37 CFR 1.98(a)(2).

#### ***Preliminary Amendment***

The preliminary amendment filed on 25 September 2006 complies with 37 CFR 1.98(a)(2).

#### ***Specification***

The disclosure is objected to because of the following informalities:

It is suggested that the applicant add and [delete] the following:

Col. 1, [0014]: "The present [inventor has] inventors have formed ...."

Col. 2, [0014]: "As a result, the present [inventor has] inventors have formed ...."

Appropriate correction is required.

The specification has been checked to the extent necessary to determine the presence of all possible minor errors. However, the applicants' cooperation is requested in correcting any errors of which applicants may become aware in the specification.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

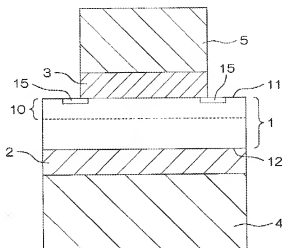
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Okamura et al. (US 2003/0183895 A1; hereinafter, "**Okamura**").

***Regarding claim 1:***

Okamura discloses a process for producing a Schottky junction type semiconductor device, comprising forming a Schottky electrode on a surface of a silicon carbide epitaxial layer (10), wherein a Schottky electrode (3) made of molybdenum, tungsten (col. 6, [0077]), or an alloy (col. 6, [0077]) thereof is formed on the surface of the silicon carbide epitaxial layer (10) and is subjected to heat treatment (col. 2, [0027]) so as to induce an alloying reaction at an interface of the silicon carbide epitaxial layer (10) and the Schottky electrode (3), thereby forming an alloy layer (ohmic metal layer) at the interface, whereby the height of a Schottky barrier is controlled while maintaining an n-factor at a nearly constant low value (FIG. 1).

FIG. 1



Thus, Okamura anticipates this claim.

*Regarding claim 2:*

Okamura discloses a process for producing a Schottky junction type semiconductor device as defined in claim 1, wherein a heat treatment temperature is in the range of 300 to 1200°C (col. 2, [0031]; col. 3, [0039]; claims 8, 11).

Thus, Okamura anticipates this claim.

*Regarding claim 3:*

Okamura discloses a process for producing a Schottky junction type semiconductor device as defined in claim 2, wherein the height of a Schottky barrier is controlled in the range of 1.0 to 1.3 eV while maintaining an n-factor at 1.05 or a lower value (“... forward rise voltage of 1.3 V/1A.” – col. 6, [0077]).

Thus, Okamura anticipates this claim.

Claims 1-3 are rejected.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter H. Swanson whose telephone number is (571) 270-3322. The examiner can normally be reached on Monday to Thursday from 8:00 to 17:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew S. Smith can be reached on (571) 272-1907. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Walter H. Swanson/

18 June 2008

/Khiem D. Nguyen/  
Examiner, Art Unit 2823